

REMARKS

Applicants respectfully request entry of the following amendments and remarks in response to the Office Action mailed June 25, 2009. Applicants respectfully submit that the amendments and remarks contained herein place the instant application in condition for allowance.

Upon entry of the amendments in this response, claims 1, 6, 11, 16, and 21 are pending. In particular, Applicants add claim 21 and amend claims 1, 6, 11, and 16. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

I. Rejections Under 35 U.S.C. §103

A. Claim 1 is Allowable Over Horvitz, Takagi, Barrett, and Malkin

The Office Action indicates that claim 1 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,182,133 ("Horvitz") in view of U.S. Patent No. 5,881,231 ("Takagi"), further in view of U.S. Patent No. 5,727,129 ("Barrett") further in view of U.S. Patent No. 6,085,193 ("Malkin"). Applicants respectfully traverse this rejection for at least the reason that *Horvitz* in view of *Takagi*, *Barrett*, and *Malkin* fail to disclose, teach, or suggest all of the elements of claim 1. More specifically, claim 1 recites:

A system for facilitating communication between a user and a network of information items, comprising:
a remote data storage device for storing the information items, wherein the information items are stored in the form of pages, and wherein the pages contain a plurality of links to other information items;
a multi-layer architecture comprising:
a client device having a user interface program thereon, for allowing a user to interface with the network and request the information items; and
a server device, in communication with the client device and in communication with the remote storage device, for handling information requests from multiple clients and for storing information retrieved from the data storage devices locally in a server

cache memory, the server device including at least the following:

- a data collection module for collecting and storing, at the server device,** successive actions of a single particular authenticated user on a user specific basis that distinguishes between specific registered and unregistered users, the data collection module further configured to track sequences of navigational events of both the single particular authenticated user and at least one unauthenticated user; and
- a probability module in communication with the data collection module for calculating a first probability for the desirability of each of the links based on the action of the single particular user and for comparing each of the probabilities to a predetermined threshold value associated with business rules which factor a level of risk of retrieving data that may not be used and an associated hardware cost of cache memory to identify predicted links and for retrieving the predicted information items associated with the links from the remote data storage devices and enabling the storage of the predicted information items on both the client device layer and the server device layer of the multi-layer architecture in advance of the single particular user's request for the selected information items, the probability module including a dedicated rules engine for storing the business rules, the probability module further configured to:
 - update the probabilities assigned to the links with each successive user activity;
 - abort retrieving the predicted information items if the user requests an information item other than the predicted information items;
 - continue retrieving the predicted information items from the remote data storage devices and storing the predicted information items in the server cache memory if the user requests the predicted information item; and

download from the server device to the client device, the user requested information item to the client from the server cache memory; wherein the first probability is calculated based solely on the actions of the single particular user during a past navigation and not as a member of a larger set of users, wherein the probability calculation module is further configured to calculate a second probability, the second probability being based on selection data of at least one link from a plurality of unregistered users, the probability being used to determine a likelihood that another user will select the at least one link, such that in response to the probability meeting a predetermined threshold, data related to the link will be retrieved prior to the another user selecting the link.

(Emphasis added).

Applicants respectfully submit that claim 1, as amended, is allowable over the cited art for at least the reason that none of *Horvitz*, *Takagi*, *Barrett*, and *Malkin*, taken alone or in combination, discloses, teaches, or suggests a “system for facilitating communication between a user and a network of information items, comprising... **a data collection module for collecting and storing, at the server device**, successive actions of a single particular authenticated user on a user specific basis that distinguishes between specific registered and unregistered users, the data collection module further configured to track sequences of navigational events of both the single particular authenticated user and at least one unauthenticated user” as recited in claim 1. More specifically, *Horvitz* discloses “us[ing] available computer resources including but not limited to periods of low processing and low network activity, such as idle time, for prefetching web pages, or pre-selected portions thereof, into local cache of a client computer” (column 1, line 11). However, this is different than claim 1, as amended, for at least the reason that claim 1 recites “**a data collection module for collecting and storing, at the server device**, successive actions of a single particular authenticated user on a user specific basis that distinguishes between specific registered and unregistered users, the data collection module

further configured to track sequences of navigational events of both the single particular authenticated user and at least one unauthenticated user.”

Further, *Takagi* fails to overcome the deficiencies of *Horvitz*. More specifically, *Takagi* discloses “provid[ing] an information processing system in which the necessary information can be transferred via a network by the time this information becomes actually necessary” (column 3, line 26). However, this is different than “**a data collection module for collecting and storing, at the server device**, successive actions of a single particular authenticated user on a user specific basis that distinguishes between specific registered and unregistered users, the data collection module further configured to track sequences of navigational events of both the single particular authenticated user and at least one unauthenticated user” as recited in claim 1.

Similarly, *Barrett* fails to overcome the deficiencies of *Horvitz* and *Takagi*. More specifically, *Barrett* discloses “a Web page likely to be selected is identified” (column 9, line 9). However, *Barrett* fails to suggest a “probability module... configured to... **download from the server device to the client device**, the user requested information item to the client from the server cache memory” as recited in claim 1.

Further, *Malkin* fails to overcome the deficiencies of *Horvitz*, *Takagi*, and *Barrett*. More specifically, *Malkin* discloses “[s]toring the PHI with the cached object provides additional opportunity for prefetching” (column 19, line 65). However, *Malkin* fails to even suggest “**a data collection module for collecting and storing, at the server device**, successive actions of a single particular authenticated user on a user specific basis that distinguishes between specific registered and unregistered users, the data collection module further configured to track sequences of navigational events of both the single particular authenticated user and at least one unauthenticated user” as recited in claim 1. For at least these reasons, claim 1, as amended, is allowable.

B. Claim 6 is Allowable Over Horvitz, Takagi, Barrett, and Malkin

The Office Action indicates that claim 6 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,182,133 (“*Horvitz*”) in view of U.S. Patent No. 5,881,231 (“*Takagi*”), further in view of U.S. Patent No. 5,727,129 (“*Barrett*”) further in view of U.S. Patent No. 6,085,193 (“*Malkin*”). Applicants respectfully traverse this rejection for at least the reason that *Horvitz* in view of *Takagi*, *Barrett*, and *Malkin* fail to disclose, teach, or suggest all of the elements of claim 6. More specifically, claim 6 recites:

A method for facilitating communication between a user and a network of information items, comprising:
providing a multi-layer architecture comprising a client device and a server device;
storing the information items on a remote data storage device, wherein the information items are stored in the form of pages, and wherein the pages contain a plurality of links to other information items;
configuring the client device having a user interface program thereon, to allow a user to interface with the network and request a download of the information items;
configuring the server device for handling information requests from multiple clients and for storing information retrieved from the data storage devices locally in server cache memory;
collecting and storing, at the server device, successive actions of an authenticated single particular user;
calculating, via a probability module that includes a rules engine, a first probability for each of the links based on the successive actions of the authenticated single particular user on a specific basis that distinguishes between a specific registered user and unregistered users;
comparing each of the probabilities to a predetermined threshold value that is determined from business rules, stored in the rules engine, which factor a level of risk of retrieving data that may not be used where the level of risk is restricted to an associated hardware cost of cache memory;
retrieving the information items associated with the links from the remote data storage devices;
enabling the storage of the information items on both the client device layer and the server device layer of the multi-layer architecture in advance of the single particular user's request for the selected information items;

updating the probabilities assigned to the links with each successive user activity;
retrieving the predicted information items if the user requests an information item other than the predicted information items;
retrieving the predicted information items from the remote data storage devices; and storing the predicted information items in the server cache memory if the user requests the predicted information item; and
downloading, from the server device to the client device, the user requested information item to the client from the server cache memory;
wherein the first probability is calculated based solely on the actions of the single particular user during a past navigation and not as a member of a larger set of users,
wherein the probability module is further configured to calculate a second probability, the second probability being based on selection data of at least one link from a plurality of unregistered users, the probability being used to determine a likelihood that another user will select the at least one link, such that in response to the probability meeting a predetermined threshold, data related to the link will be retrieved prior to the another user selecting the link.

(Emphasis added).

Applicants respectfully submit that claim 6, as amended, is allowable over the cited art for at least the reason that none of *Horvitz*, *Takagi*, *Barrett*, and *Malkin*, taken alone or in combination, discloses, teaches, or suggests a “method for facilitating communication between a user and a network of information items, comprising... **collecting and storing, at the server device, successive actions of an authenticated single particular user**” as recited in claim 6. More specifically, *Horvitz* discloses “us[ing] available computer resources including but not limited to periods of low processing and low network activity, such as idle time, for prefetching web pages, or pre-selected portions thereof, into local cache of a client computer” (column 1, line 11). However, this is different than claim 6, as amended, for at least the reason that claim 6 recites “**collecting and storing, at the server device, successive actions of an authenticated single particular user.**”

Further, *Takagi* fails to overcome the deficiencies of *Horvitz*. More specifically, *Takagi* discloses “provid[ing] an information processing system in which the necessary information can be transferred via a network by the time this information becomes actually necessary” (column 3, line 26). However, this is different than “**collecting and storing, at the server device, successive actions of an authenticated single particular user**” as recited in claim 6.

Similarly, *Barrett* fails to overcome the deficiencies of *Horvitz* and *Takagi*. More specifically, *Barrett* discloses “a Web page likely to be selected is identified” (column 9, line 9). However, *Barrett* fails to suggest a “**collecting and storing, at the server device, successive actions of an authenticated single particular user**” as recited in claim 6.

Further, *Malkin* fails to overcome the deficiencies of *Horvitz*, *Takagi*, and *Barrett*. More specifically, *Malkin* discloses “[s]toring the PHI with the cached object provides additional opportunity for prefetching” (column 19, line 65). However, *Malkin* fails to even suggest “**collecting and storing, at the server device, successive actions of an authenticated single particular user**” as recited in claim 6. For at least these reasons, claim 6, as amended, is allowable.

C. Claim 11 is Allowable Over Horvitz, Takagi, Barrett, and Malkin

The Office Action indicates that claim 11 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,182,133 (“*Horvitz*”) in view of U.S. Patent No. 5,881,231 (“*Takagi*”), further in view of U.S. Patent No. 5,727,129 (“*Barrett*”) further in view of U.S. Patent No. 6,085,193 (“*Malkin*”). Applicants respectfully traverse this rejection for at least the reason that *Horvitz* in view of *Takagi*, *Barrett*, and *Malkin* fail to disclose, teach, or suggest all of the elements of claim 11. More specifically, claim 11 recites:

A method for facilitating communication between a user and a network of information items, comprising:

means for providing a multi-layer architecture comprising a client device and a server device;

means for storing the information items on a remote data storage device, wherein the information items are stored in the form of pages, and wherein the pages contain a plurality of links to other information items;

means for configuring the client device having a user interface program thereon, to allow a user to interface with the network and request a download of the information items;

means for configuring the server device for handling information requests from multiple clients and for storing information retrieved from the data storage devices locally in server cache memory;

means for collecting and storing successive actions of an authenticated particular user,

means for calculating a first probability for each of the links based on the successive actions of the authenticated single particular user on a user specific basis that distinguishes between a specific registered user and unregistered users;

means for comparing each of the probabilities to a predetermined threshold value that is determined from business rules which factor a level of risk of retrieving data that may not be used where the level of risk is restricted to an associated hardware cost of cache memory;

means for retrieving the information items associated with the links from the remote data storage devices;

means for enabling the storage of the information items on both the client device layer and the server device layer of the multi-layer architecture in advance of the single particular user's request for the selected information items;

means for updating the probabilities assigned to the links with each successive user activity;

means for retrieving the predicted information items if the user requests an information item other than the predicted information items;

means for retrieving the predicted information items from the remote data storage devices;

means for storing the predicted information items in the server cache memory if the user requests the predicted information item; and

means for downloading the user requested information item to the client from the server cache memory;

wherein the first probability is calculated based solely on the actions of the single particular user during a past navigation and not as a member of a larger set of users,

wherein the server device is further configured to calculate a second probability, the second probability being based on selection data of at least one link from a plurality of unregistered users, the probability being used to determine a likelihood that another user will select the at least one link, such that in response to the probability meeting a predetermined threshold, data related to the link will be retrieved prior to the another user selecting the link.

(Emphasis added).

Applicants respectfully submit that claim 11, as amended, is allowable over the cited art for at least the reason that none of *Horvitz*, *Takagi*, *Barrett*, and *Malkin*, taken alone or in combination, discloses, teaches, or suggests a “method for facilitating communication between a user and a network of information items, comprising... **means for collecting and storing successive actions of an authenticated particular user**” as recited in claim 11. More specifically, *Horvitz* discloses “us[ing] available computer resources including but not limited to periods of low processing and low network activity, such as idle time, for prefetching web pages, or pre-selected portions thereof, into local cache of a client computer” (column 1, line 11). However, this is different than claim 11, as amended, for at least the reason that claim 11 recites “**means for collecting and storing successive actions of an authenticated particular user.**”

Further, *Takagi* fails to overcome the deficiencies of *Horvitz*. More specifically, *Takagi* discloses “provid[ing] an information processing system in which the necessary information can be transferred via a network by the time this information becomes actually necessary” (column 3, line 26). However, this is different than “**means for collecting and storing successive actions of an authenticated particular user**” as recited in claim 11.

Similarly, *Barrett* fails to overcome the deficiencies of *Horvitz* and *Takagi*. More specifically, *Barrett* discloses “a Web page likely to be selected is identified” (column 9, line 9). However, *Barrett* fails to suggest a “**means for collecting and storing successive actions of an authenticated particular user**” as recited in claim 11.

Further, *Malkin* fails to overcome the deficiencies of *Horvitz*, *Takagi*, and *Barrett*. More specifically, *Malkin* discloses “[s]toring the PHI with the cached object provides additional opportunity for prefetching” (column 19, line 65). However, *Malkin* fails to even suggest “**means for collecting and storing successive actions of an authenticated particular user**” as recited in claim 11. For at least these reasons, claim 11, as amended, is allowable.

D. Claim 16 is Allowable Over Horvitz, Takagi, Barrett, and Malkin

The Office Action indicates that claim 16 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,182,133 (“*Horvitz*”) in view of U.S. Patent No. 5,881,231 (“*Takagi*”), further in view of U.S. Patent No. 5,727,129 (“*Barrett*”) further in view of U.S. Patent No. 6,085,193 (“*Malkin*”). Applicants respectfully traverse this rejection for at least the reason that *Horvitz* in view of *Takagi*, *Barrett*, and *Malkin* fail to disclose, teach, or suggest all of the elements of claim 16. More specifically, claim 16 recites:

A first network for facilitating communication between a user and a network of information items, comprising:
a remote data storage device for storing the information items, wherein the information items are stored in the form of pages, and wherein the pages contain a plurality of links to other information items;
a multi-layer architecture comprising:
a client device having a user interface program thereon, for allowing a user to interface with the network and request a download of the information items;
a server device, in communication with the client device and in communication with the remote storage device, for handling information requests from multiple clients and for storing information retrieved from the data storage devices locally in server cache memory; and
the first network;
a data collection module for collecting and storing, at the server device, successive actions of an authenticated single particular user on a user specific basis that distinguishes between a specific registered user and unregistered users; and
a probability module in communication with the data collection module for calculating a probability for each of the links

based on the successive actions of the authenticated single particular user, and for comparing each of the probabilities to a predetermined threshold value that is determined from business rules which factor a level of risk of retrieving data that may not be used where the level of risk is restricted to an associated hardware cost of cache memory, and for retrieving the information items associated with the links from the remote data storage devices and enabling the storage of the information items on both the client device layer and the server device layer of the multi-layer architecture in advance of the single particular user's request for the selected information items, the probability module including a rules engine for storing the business rules,

wherein the probability module updates the probabilities assigned to the links with each successive user activity;

wherein the probability module aborts retrieving the predicted information items if the user requests an information item other than the predicted information items;

wherein the probability module continues retrieving the predicted information items from the remote data storage devices and storing the predicted information items in the server cache memory if the user requests the predicted information item; and

wherein the probability module downloads the user requested information item to the client from the server cache memory;

wherein the probability is calculated based solely on the actions of the single particular user during a past navigation and not as a member of a larger set of users,

wherein the probability module is further configured to calculate a second probability, the second probability being based on selection data of at least one link from a plurality of unregistered users, the probability being used to determine a likelihood that another user will select the at least one link, such that in response to the probability meeting a predetermined threshold, data related to the link will be retrieved prior to the another user selecting the link.

(Emphasis added).

Applicants respectfully submit that claim 16, as amended, is allowable over the cited art for at least the reason that none of *Horvitz*, *Takagi*, *Barrett*, and *Malkin*, taken alone or in combination, discloses, teaches, or suggests a "first network for facilitating communication between a user and a network of information items, comprising... **a data collection module for collecting and storing, at the server device, successive actions of an authenticated**

single particular user on a user specific basis that distinguishes between a specific registered user and unregistered users" as recited in claim 16. More specifically, *Horvitz* discloses "us[ing] available computer resources including but not limited to periods of low processing and low network activity, such as idle time, for prefetching web pages, or pre-selected portions thereof, into local cache of a client computer" (column 1, line 11). However, this is different than claim 16, as amended, for at least the reason that claim 16 recites "***a data collection module for collecting and storing, at the server device, successive actions of an authenticated single particular user on a user specific basis that distinguishes between a specific registered user and unregistered users.***"

Further, *Takagi* fails to overcome the deficiencies of *Horvitz*. More specifically, *Takagi* discloses "provid[ing] an information processing system in which the necessary information can be transferred via a network by the time this information becomes actually necessary" (column 3, line 26). However, this is different than "***a data collection module for collecting and storing, at the server device, successive actions of an authenticated single particular user on a user specific basis that distinguishes between a specific registered user and unregistered users***" as recited in claim 16.

Similarly, *Barrett* fails to overcome the deficiencies of *Horvitz* and *Takagi*. More specifically, *Barrett* discloses "a Web page likely to be selected is identified" (column 9, line 9). However, *Barrett* fails to suggest a "***a data collection module for collecting and storing, at the server device, successive actions of an authenticated single particular user on a user specific basis that distinguishes between a specific registered user and unregistered users***" as recited in claim 16.

Further, *Malkin* fails to overcome the deficiencies of *Horvitz*, *Takagi*, and *Barrett*. More specifically, *Malkin* discloses "[s]toring the PHI with the cached object provides additional opportunity for prefetching" (column 19, line 65). However, *Malkin* fails to even suggest "***a***

data collection module for collecting and storing, at the server device, successive actions of an authenticated single particular user on a user specific basis that distinguishes between a specific registered user and unregistered users" as recited in claim 16. For at least these reasons, claim 16, as amended, is allowable.

II New Claim 21

In addition, Applicants add new claim 21. New claim 21 is allowable over the cited art for at least the reason that this claim depends from allowable independent claim 1. Support for this claim may be found, among other places in FIG. 1.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, all objections and/or rejections have been traversed, rendered moot, and/or addressed, and that the now pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested.

Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and Official Notice, or statements interpreted similarly, should not be considered well-known for the particular and specific reasons that the claimed combinations are too complex to support such conclusions and because the Office Action does not include specific findings predicated on sound technical and scientific reasoning to support such conclusions.

If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,

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